

Field of the invention

Please delete the paragraph bridging pages 3 and 4 and insert the following replacement paragraph:

SVB B1
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109855107-0514-01
Conventionally, as a method of purifying and removing metal ion impurities contained in an aqueous hydrogen peroxide solution, there is proposed a method comprising bringing a H^+ type strongly acidic cation exchange resin containing a sulfonic acid group into contact with an aqueous hydrogen peroxide solution. However, merely by contacting the strongly acidic cation exchange resin with the aqueous hydrogen peroxide solution, although metal ion impurities such as Na are removed, it is difficult to remove impurities which are not dissolved completely in the aqueous hydrogen peroxide solution and/or which are originated from metal such as Al, Fe and Cr easily forming a complex with a hydroxide ion. There is a further problem that a cation exchange resin is deteriorated by contacting with the aqueous hydrogen peroxide solution, and thereby, a large amount of sulfate ion is generated from a SO_3H group of the cation exchange resin.

On page 4, please delete the first complete paragraph and insert the following replacement paragraph:

SVB B2
a 2
In an effort to solve the above problems, there is also known a method that after a contact of an aqueous hydrogen peroxide solution and a cation exchange resin, further a contact with an OH^- type strongly basic anion exchange resin having a quaternary ammonium group is carried out. By said method, the impurities which can not be removed by a strongly acidic cation exchange resin can be removed.

On page 5, please delete the first complete paragraph and insert the following replacement paragraph:

a 3
However, in the above cases, undissolved metal ion impurities in an aqueous hydrogen peroxide solution and metal ion impurities which easily form a complex together

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with a hydroxide ion are not removed completely and remain. Therefore a high purity aqueous hydrogen peroxide can not be obtained. Due to the influence of the metal impurities which easily form a complex together with a hydroxide ion and the remaining metal ion impurities, it is difficult to fully prevent the decomposition of hydrogen peroxide. As a result, it is difficult to purify an aqueous hydrogen peroxide solution safely.

On page 9, please delete the section heading "Object of the invention".

On page 9, please delete the first complete paragraph and insert the following replacement paragraph:

b4
An object of the present invention is to provide a purifying process of an aqueous hydrogen peroxide solution in which metal ion impurities and the metal ion impurities are removed as completely as possible.

On page 10, please delete the second complete paragraph and insert the following replacement paragraph:

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As described above, the treatments of three-step or four-step of ion exchange resin lead to the production of a high-purity aqueous hydrogen peroxide solution from which ion impurities are removed as completely as possible.

On page 12, please delete the first complete paragraph and insert the following replacement paragraph:

b6
Said purified aqueous hydrogen peroxide solution is preferably obtained by filtrating solid impurities contained in the aqueous hydrogen peroxide solution to which a flocculating agent has been preliminarily added, by a fine filter. By preliminarily adding a flocculating agent into an aqueous hydrogen peroxide solution and filtrating impurities by a fine filter, the insoluble metal ion impurity components which can not be removed by the ion exchange treatment are removed. As a result, metal ion impurities in the aqueous hydrogen peroxide solution can be removed up to a ppt level ($1/10^{12}$) or its vicinities. Further, such

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filtration leads high duplicativity of the metal ion impurities removing level which is accomplished at a treatment by an ion exchange resin, as described later.

Please delete the paragraph bridging pages 18 and 19 and insert the following replacement paragraph:

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The H⁺ type cation exchange resin used for the invention is one conventionally known as a strongly acidic cation exchange resin. Generally, the strongly acidic cation exchange resin preferably has a network structure in which a sulphonic acid group is introduced into a styrene-divinylbenzene crosslinked copolymer. The degree of cross linkage of such cation exchange resin is usually 6 to 10, preferably 7 to 9.

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On page 19, please delete the first complete paragraph and insert the following replacement paragraph:

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The H⁺ type strongly acidic cation exchange resin includes, for example, PK216, SK1B and IR-120B.

On page 19, please delete the second complete paragraph and insert the following replacement paragraph:

a9
The H⁺ type cation exchange resin is preferably regenerated by repeating a process, 2 times or more, preferably 2 to 12 times, in which a cation exchange resin is treated with a downflow of inorganic acid aqueous solution (a regenerant) and then washed with upflow of ultra-pure water.

Please delete the paragraph bridging pages 19 and 20 and insert the following replacement paragraph:

a10
Usually, regeneration of a cation exchange resin is carried out by a process that the regenerant aqueous solution is passed through and then ultra-pure water is passed through for washing the resin. In the present invention, a cycle of regenerant flowing/ultra-pure water washing is desirably repeated particularly 2 or more times. By repeating the

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inorganic acid aqueous solution/ultra-pure water flow, the exchange resin can be effectively and homogeneously regenerated and further can be washed up to the inside of the resin due to contraction and swelling of the resin.

On page 24, please delete the first complete paragraph and insert the following replacement paragraph:

a11
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To convert into a hydroxide ion type anion exchange resin, it is preferred that a process, in which an anion exchange resin is treated with a downflow of strongly alkali aqueous solution (regenerant) and then treated with upflow of ultra-pure water, is repeated 2 or more times thereby to regenerate. Usually, an anion exchange resin is brought into contact with a regenerant aqueous solution by a process that the regenerant aqueous solution is passed through and washed by ultra-pure water. In the present invention, a cycle of passing of regenerant/washing with ultra-pure water is desirably repeated particularly 2 or more times. By repeating the strongly alkali aqueous solution/ultra-pure water flow, the exchange resin can be effectively and homogeneously regenerated and further can be washed to the inside of the resin due to contraction and swelling of the resin.

On page 26, please delete the second complete paragraph and insert the following replacement paragraph:

a12
As the carbonate or bicarbonate, a conventionally known carbonate or bicarbonate such as sodium carbonate, sodium bicarbonate, potassium carbonate and potassium bicarbonate is used. By repeating the carbonate or bicarbonate aqueous solution/ultra-pure water flow, as described above, the exchange resin can be effectively and homogeneously regenerated and further can be washed to the inside of the resin due to contraction and swelling of the resin.

On page 31, please delete the second complete paragraph and insert the following replacement paragraph: